Application No.: 10/018847 Docket No.: 05587-00324-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Frank Osan et al.

Application No.: 10/018847 Confirmation No.: 2191

Filed: December 27, 2001 Art Unit: 1711

For: METHOD OF PRODUCING AMORPHOUS POLYOLEFINS WITH A WIDE MOLE WEIGHT DISTRIBUTION

Examiner: T. T. Tran

REQUEST REINSTATEMENT OF THE APPEAL

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

REMARKS

In response to the Office Action dated November 30, 2004, the applicants respectfully request reinstatement of the Appeal and entry of the Supplemental Appeal Brief.

The Examiner has reopened prosecution and made the following two new grounds of rejections. Claims 11-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thakker et al. U.S. Patent No. 6,080,818 or Sustic U.S. Patent No. 5,723,546, in view of Canich et al. U.S. Patent No. 6,194,341. Claims 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thakker and Canich as applied to claim 11 above, and further in view of Breckner et al. U.S. Patent No. 5,646,220.

The Examiner stated that the applicants could request reinstatement of the Appeal if such request is accompanied by a Supplemental Appeal Brief. The applicant has filed a Supplemental Appeal Brief with this paper.

A one month extension fee has been paid. Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 05587-00324-US from which the undersigned is authorized to draw.

Respectfully submitted,

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Application No.: 10/018847 Attorney Docket No.: 05587-00324-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Frank Osan et al.

Application No.: 10/018847 Art Unit: 1711

Filed: December 18, 2001 Examiner: T. T. Tran

For: METHOD OF PRODUCING AMORPHOUS POLYOLEFINS WITH A WIDE MOLE WEIGHT DISTRIBUTION

Commissioner for Patents
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SUPPLEMENTAL APPEAL BRIEF

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In re Patent Application of:
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Filed: December 18, 2001

Examiner: T. T. Tran

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P.O. Box 1450
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SUPPLEMENTAL APPEAL BRIEF

I. THE REAL PARTY OF INTEREST

As previously stated in the Appeal Brief filed on August 30, 2004, Ticona GmbH is the real party of interest. The application was assigned and recorded on February 6, 2002, on Reel No. 012589 and Frame No. 0815.

II. RELATED APPEALS AND INTERFERENCES

As previously stated in the Appeal Brief filed on August 30, 2004, the undersigned is not aware of any related appeals or interferences involving this application

III. THE STATUS OF THE CLAIMS

As previously stated in the Appeal Brief filed on August 30, 2004, claims 1-10 have been cancelled. Claims 11-30 are pending. Again, the subject of the appeal is claims 11-30 which are attached in Appendix I.

IV. STATUS OF AMENDMENTS AFTER FINAL

As previously stated in the Appeal Brief filed on August 30, 2004, the applicant filed an Amendment After Final on May 14, 2004 and it was made of record pursuant to the Advisory Action mailed June 16, 2004. There have been no new amendments filed since June 16, 2004.

V. SUMMARY OF THE INVENTION

The applicant's invention is drawn to a method for the continuous preparation a bimodal or multimodal mixture of amorphous polyolefins of different molar mass (see page 1, lines 5-13 of the specification), wherein the viscosity ratio of at least two amorphous polyolefins having a different molar mass is less than 0.005 or greater than 4 (see the specification at page 1, lines 22-25) which comprises

preparing the bimodal or multimoldal mixture by process a) or process b),

a) preparing the amorphous polyolefin having a high molar mass by solution polymerization in one reactor of an assembly of two or more reactors connected in parallel or in series and the other constituents of the mixture, which include at least one polyolefin which has a lower molar mass than said at least one polyolefin with said high molar mass, are produced in the other reactors after which the polyolefins are mixed in solution,

homogenizing the solution of polymer mixture obtained and separating off the solvent or

b) preparing the amorphous polyolefin having a high molar mass by solution polymerization in one reactor and the other constituents of the mixture, which include at least one polyolefin which has a lower molar mass than said at least one polyolefin with said high molar mass, are introduced in the form of a polymer solution into the solution flowing from the reactor,

and homogenizing the solution of polymer mixture obtained and separating off the solvent. (see claim 11, the specification at page 3, lines 16-25 and page 12, line 5 through page 13, line 27).

The applicant's invention further relates to a process wherein the amorphous polyolefin has a high molar mass has a VN of > 80 ml/g and an M_w of > 90,000 g/mol (see claim 11, original claim 2 and the specification at page 3, lines 27-33).

In the applicant's preferably embodiment the amorphous polyolefin is a cycloolefin copolymer (see claim 16 and the specification at page 3, lines 35-37).

The invention also relates to a process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass wherein at least one polyolefin has a high molar mass and at least one polyolefin has a lower molar mass than said at least one polyolefin with said high molar mass which comprises solution polymerizing the amorphous polyolefin having a high molar mass in one reactor of an assembly of two or more reactors connected in parallel or in series and producing the amorphous polyolefin with the lower molecular mass in the other reactors mixing the amorphous polyolefin having a high molar mass with the amorphous polyolefin having a lower molar mass in solution,

homogenizing the solution of polymer mixture obtained and

separating off the solvent (see claim 28 and the specification at page 12, lines 13-35).

Applicant's invention also relates to a process wherein in said assembly there is two or more reactors connected in parallel (see claim 29 and the specification at page 12, lines 13 through 15).

Applicant's invention also relates to a process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass wherein at least one polyolefin has a high molar mass and at least one polyolefin has a lower molar mass than said at least one polyolefin with said high molar mass, which comprises

solution polymerizing the amorphous polyolefin having a high molar mass in one reactor and introducing the amorphous polyolefin with the lower molecular mass in the form of a polymer solution into the solution flowing from the reactor,

homogenizing the solution of polymer mixture obtained and

separating off the solvent. (see claim 30 and the specification at page 12, line 5 through page 13, line 27).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 11-30 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Thakker et al. U.S. Patent No. 6,080,818 ("Thakker") or Sustic

U.S. Patent No. 5,723,546, ("Sustic") in view of Canich et al. U.S. Patent No. 6,194,341 ("Canich")?

2. Whether Thakker and Sustic are combinable with Canich?

3. Whether Thakker and Sustic teach the amorphous polyolefin has a high molar mass has a VN of > 80 ml/g as is required by the applicant's claim 12?

4. Whether Thakker, Sustic and Canich teach that the amorphous polyolefin is a cycloolefin copolymer as is required by the applicant's claim 16?

5. Whether claims 17-27 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Thakker and Canich as applied to claim 11 above, and further in view of Brekner et al. U.S. Patent No. 5,646,220 ("Brekner")?

6. Whether claim 29, which requires that in said assembly there is two or more reactors connected in parallel, is suggested by the prior art?

VII. ARGUMENTS

A. Group I – Claims 11, 28 and 30

Applicant's invention pertains to a process for the preparation of a "bimodal" or "multimodal" amorphous polyolefin as a mix of two or more polymers having different molar masses. In such process, the polymers having different molar masses are prepared separately from each other, mixed in solution, homogenized in solution and subsequently the solvent is separated off.

An object of the applicant's invention was to provide an economical and environmentally friendly continuous process for producing a bimodal or multimodal

mixture of one or more amorphous polyolefins (see page 3, lines 11-15 of the specification).

Sustic states at col. 7, lines 32-52,

> The polymer blends of the present invention may be prepared by any conventional or other suitable method of combining polymers. For example, the LMW APAO [low molecular weight amorphous polyalphaolefin] and HMW APAO [high molecular weight amorphous polyalphaolefin] may be combined **by mixing in a batch mixer or kneading with a sigma blade kneader**, which is named after its sigma-shaped blade that virtually scrapes the sides of the container to facilitate blending of the polymer. **Selection of the LMW and HMW APAO polymers is crucial to obtain the polymer blends of the invention,** of course, although to be properly blended the APAOs must simply be in a molten state when combined by mixing or kneading. **Another suitable way to combine the LMW and HMW APAOs is in an extruder**. When extrusion is used, the APAO polymers should be heated above the softening point. Naturally, the temperature at which the LMW and HMW APAOs become molten or soft will vary according to the particular APAOs selected. It is to be understood that once polymers have been selected, one of ordinary skill in the art is capable of determining the temperature at which the polymers will become molten or soft as required for proper mixing.
>
> The polymer blends typically contain about 2 to 40 weight percent of the HMW APAO polymer with about 60 to 98 weight percent LMW APAO polymer. Preferably, the polymer blends contain about 5 to 35 weight percent of the HMW APAO, more preferably about 10 to 30 weight percent of the HMW APAO, with the remainder being LMW APAO. One or both of the HMW and LMW APAO polymers may be correspondingly reduced if an additive is included in up to about 5 weight percent of the total polymer blend. (emphasis added)

Thakker is a continuation-in-part of Sustic (see the front page of Thakker). Thakker also discloses at col. 14, lines 25-57,

> The polymer blends of the present invention may be prepared by any conventional or other suitable method of combining polymers.

> For example, the LMW APAO [low molecular weight amorphous polyalphaolefin] and HMW APAO [high molecular weight amorphous polyalphaolefin] may be **combined by mixing in a batch mixer or kneading with a sigma blade kneader**, which is named after its sigma-shaped blade that virtually scrapes the sides of the container to facilitate blending of the polymer. **Selection of the LMW and HMW APAO polymers is crucial to obtain the polymer blends of the invention, of course**, although to be properly blended the APAOs must simply be in a molten state when combined by mixing or kneading. **Another suitable way to combine the LMW and HMW APAOs is in an extruder**. When extrusion is used, the APAO polymers should be heated above the softening point. Naturally, the temperature at which the LMW and HMW APAOs become molten or soft will vary according to the particular APAOs selected. It is to be understood that once polymers have been selected, one of ordinary skill in the art is capable of determining the temperature at which the polymers will become molten or soft as required for proper mixing.
>
> **The polymer blends useful as adhesives or in composites** typically contain about 2 to 40 weight percent of the HMW APAO polymer with about 60 to 98 weight percent LMW APAO polymer. Preferably, the polymer blends contain about 5 to 35 weight percent of the HMW APAO, more preferably about 10 to 30 weight percent of the HMW APAO, with the remainder being LMW APAO. The amount of one or both of the HMW and LMW APAO polymers may be correspondingly reduced if an additive is included, typically in an amount up to about 5 weight percent of the total polymer blend. (emphasis added)

As the Examiner has correctly stated, neither Sustic nor Thakker disclose the process step, of mixing in solution and subsequently the solvent is separated off (see the middle of page 3 of the office action mailed November 30, 2004).

Furthermore, these references do not mention or discuss homogenizing the polymer which is an important part in producing bimodal or multimodal mixtures of amorphorous polyolefins. Both Sustic and Thakker are silent that the polymers produced are either bimodal or multimodal.

As stated in the Appeal Brief filed August 30, 2004,

> The terms multimodal, bimodal and monomodal are terms recognized by one of ordinary skill in the art. Performing a computer search in the U.S.P.T.O. web page reveals over 100 patents that contain these terms. For example, U.S. No. 5,527,867 at col. 1, lines 10-60 defines these terms as follows:
>
> > **Polyolefins having a multimodal molecular weight distribution (MWD),** such as polyethylene, can be made into articles by a variety of methods, including, but not limited to, extrusion molding, thermoforming and rotational molding, and have advantages over typical polyolefins lacking a multimodal MWD. **Polyolefins having a multimodal MWD process more easily**, i.e., they can be processed at a faster throughput rate with lower energy requirements, and at the same time such polymers exhibit reduced melt flow perturbations and are preferred because of improved properties for applications such as blow molding and/or high strength films. Polymers having a multimodal MWD are generally characterized by having a broad MWD, or more that one MWD peak, as reflected by size exclusion chromatography (SEC) curves.
> >
> > There are several known methods of producing polyolefins having a multimodal MWD; however, each method has its own disadvantages. Polyolefins having a multimodal MWD can be made by employing two distinct and separate catalyst systems in the same reactor, each producing a polyolefin having a different MWD; however, catalyst feed rates are usually difficult to control and the catalysts can have a detrimental effect on each other. Polymer particles produced from a dual, or even multi-, catalyst system frequently are not uniform in size. Thus, segregation of the polymer during storage and transfer can produce non-homogeneous products.
> >
> > A polyolefin having a multimodal MWD can also be made by sequential polymerization in two or more separate reactors or blending polymers of different MWD during processing; however, both of these methods increase capital cost and problems discussed earlier regarding polymer segregation can occur.
> >
> > Multimodal MWD polyethylenes can also be obtained

> directly from a single reactor polymerization processing the presence of a catalyst system comprising two or more catalytic sites, such as, for example, metallocenes, wherein each site has different propagation and termination rate constants. At certain ratios, and in certain polymerization processes, even catalysts that have different catalytic sites can produce **a monomodal, or narrow, MWD polyolefin**. Unfortunately, even under ideal conditions, a dual site catalyst system can have decreased catalytic activity. While not wishing to be bound by theory, it is hypothesized that a metallocene can bind to, and therefor inhibit the reactivity of, some of the active chromium oxide catalytic sites. Unfortunately, there are limits to know methods of preparing these very desirable, multimodal, or broad, molecular weight distribution or multimodal molecular weight distribution polyolefins. (emphasis added)

Both Sustic and Thakker disclose,

> The melting point of the polymer blends are typically between about 95^0 C. to 155^0 C., preferably about 137^0 C. to 153^0 C., and more preferably about 139^0 C. to 151^0 C. **The preferred polymer blends are those where only one melting point exists**, indicating the LMW and HMWAPAO polymers are substantially miscible. The **most preferred polymer blends exhibit only one melting point, which falls within the more preferable melting point range**. (emphasis added) (see Sustic at col. 8, lines 33-40 and Thakker at col. 15, lines 7-14)

The polymer blends in the applicant's invention is different from the polymers disclosed either Sustic and Thakker because the polymer blends in the applicant's invention do not have any melting points because it is amorphous but it does have a T_g.

Sustic is related to polymer blends useful for hot melt adhesives, asphalt and bitumen applications such as roofing membranes, polymeric modifiers and the like (see the abstract). Thakker is related to preparing a fiber, thread or yarn which can be used in combination with adhesive compositions. Canich is related to the polymerization of olefins(see the abstract).

Canich states at col. 12, line 55 through col. 13, line 17,

> In preferred embodiments of the process for this invention, the mixed catalyst system is employed in liquid phase (solution, slurry, suspension, bulk phase or combinations thereof), in high pressure liquid or supercritical fluid phase, or in gas phase. Each of these processes **may be employed in singular, parallel or series reactors.** The liquid processes comprise contacting olefinically unsaturated monomers with the above described catalyst system in a suitable diluent or solvent and allowing said monomers to react for a sufficient time to produce the invention copolymers. Hydrocarbyl solvents are suitable, both aliphatic and aromatic, hexane and toluene are preferred. Bulk and slurry processes are typically done by contacting the catalysts with olefinically unsaturated monomers in liquid monomer or inert diluent, the catalyst system typically being supported. **Gas phase processes similarly use a supported catalyst and are conducted in any manner known to be suitable for ethylene homopolymers or copolymers prepared by coordination polymerization**. Illustrative examples may be found in U.S. Pat. Nos. 4,543,399, 4,588,790, 5,028,670, 5,352,749, 5,382,638, 5,405,922, 5,422,999, 5,436,304, 5,453,471, and 5,463,999, and International applications WO 94/28032, WO 95/07942 and WO 96/00245. Each is incorporated by reference for purposes of U.S. patent practice. Typically the processes are conducted at temperatures of from about -100.degree. C. to 150.degree. C., preferably from about 40.degree. C. to 120.degree. C., at pressures up to about 7000 kPa, typically from about 690 kPa to 2415 kPa. Continuous processes using fluidized beds and recycle streams as the fluidizing medium are preferred.

The Examiner stated at the bottom of page 3 of the office Action,

> it would have been obvious to one of ordinary skill in the art, at the time of the invention was made, to have used solution polymerization, as taught by Canich, in the process of Sustic and Thakker, because both Sustic and Thakker teaches that any conventional process can be employed in preparing the polymer blend and would have yielded the same effects.

The applicant does not believe that Canich is combinable with Sustic and Thakker. Canich does not suggest that the process is useful for the same uses as Sustic

and Thakker. The Examiner must consider the references as a whole, In re Yates, 211 USPQ 1149 (CCPA 1981). The Examiner cannot selectively pick and choose from the disclosed multitude of parameters **without any direction** as to the particular one selection of the reference **without proper motivation**. The mere fact that the prior art may be modified to reflect features of the claimed invention does not make modification, and hence claimed invention, obvious **unless the prior art suggested the desirability of such modification** (In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); In re Baird, 29 USPQ 2d 1550 (CAFC 1994) and In re Fritch, 23 USPQ 2nd. 1780 (Fed. Cir. 1992)). In re Gorman, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) (in a determination under 35 U.S.C. § 103 it is impermissible to simply engage in a hindsight reconstruction of the claimed invention; the references themselves must provide some teaching whereby the applicant's combination would have been obvious); In re Dow Chemical Co., 837 F.2d 469,473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) (under 35 U.S.C. § 103, both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure). The applicant disagrees with the Examiner why one skilled in the art with the knowledge of the references would selectively modify the references in order to arrive at the applicant's claimed invention. The Examiner's argument is clearly based on hindsight reconstruction.

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion, or incentive supporting this combination, although it may have been obvious to try various combinations of teachings of the prior art references to achieve the applicant's claimed invention, such evidence does not establish prima facie case of obviousness (In re Geiger, 2 USPQ 2d.

1276 (Fed. Cir. 1987)). There would be no reason for one skilled in the art to combine Thakker or Sustic with Canich.

B. <u>Group II – Claims 12-15</u>

In addition, to the arguments presented in Group I above, claims 12-15 further requires the features of the amorphous polyolefin having a high molar mass has a VN of > 80 ml/g and an M_w of > 90,000 g/mol. Sustic and Thakker are silent about the VN and that the polymers bimodal or multimodal.

The Examiner asserted at the bottom of page 3 of the Office Action mailed November 30, 2004,

> Since Sustic and Thakker teach the same high molecular weight and low molecular weight polyolefins, the viscosity ratio of the polymer s would inherently be the same as the presently claimed invention.

The values comprised in claims 12 to 15 of applicant's invention are relevant for the polymer fraction having the high molar mass. The applicant does not believe that these properties are inherent. These properties result in having a high transparency (see table 1 on page 21 of the specification) and valuable mechanical and rheological properties as well (see page 14, lines 5-9 of the specification).

C. <u>Group III – Claim 16</u>

Claim 16 further limits claim 11 and requires wherein the amorphous polyolefin is a cycloolefin copolymer. Claim 16 was only rejected as being obvious over 35 U.S.C. 103(a) as being unpatentable over Thakker or Sustic in view of Canich. These references do not disclose nor teach the use of the amorphous polyolefin is a **<u>cycloolefin copolymer</u>** as is required by the applicant's claimed invention of claim 16.

D. <u>Group IV – Claims 17-26</u>

Claims 17-26 further require the bimodal or multimodal mixture comprises at least one cycloolefin copolymer comprising from 0.1 to 100% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from at least one polycyclic olefin of the formula I, II, II', III, IV, V or VI. Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Sustic or Thakker in view of Canich and further in view of Brekner.

The Examiner has relied upon Brekner for this teaching of cycloolefins. However, the applicant does not believe that Brekner is combinable with Sustic or Thakker in view of Canich. The Examiner has asserted at page 4 of the Office Action mailed November 30, 2004,

> it would have been obvious to one of ordinary skill in the art, at the time of the invention was made, to have employed the cycloolefin copoymers, as taught by Breckner, in the polymer blend of Thakker combination, because Breckner teaches that the use of cycloolefins would enhance hight heat distortion resistance and high melt viscosity in the polymer blend.

Brekner does not disclose the mix of two or more polymers having different molar masses. The Examiner has selectively chosen from Brekner.

The Examiner must consider the references as a whole, <u>In re Yates</u>, *supra*. The Examiner cannot selectively pick and choose from the disclosed multitude of parameters **<u>without any direction</u>** as to the particular one selection of the reference **<u>without proper motivation</u>**. The mere fact that the prior art may be modified to reflect features of the claimed invention does not make modification, and hence claimed invention, obvious **unless the prior art suggested the desirability of such modification** <u>(In re Gordon</u>, *supra*; <u>In re Baird</u>, *supra* and <u>In re Fritch</u>, *supra*). <u>In re Gorman</u>, *supra* (in a

determination under 35 U.S.C. § 103 it is impermissible to simply engage in a hindsight reconstruction of the claimed invention; the references themselves must provide some teaching whereby the applicant's combination would have been obvious); In re Dow Chemical Co., *supra* (under 35 U.S.C. § 103, both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure). The applicant disagrees with the Examiner why one skilled in the art with the knowledge of the references would selectively modify the references in order to arrive at the applicant's claimed invention. The Examiner's argument is clearly based on hindsight reconstruction.

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion, or incentive supporting this combination, although it may have been obvious to try various combinations of teachings of the prior art references to achieve the applicant's claimed invention, such evidence does not establish prima facie case of obviousness (In re Geiger, 2 USPQ 2d. 1276 *supra*)). There would be no reason for one skilled in the art to combine Thakker or Suctic with Canich and Brekner.

E. Group V – Claim 29

In addition to the arguments presented in Group I, above, claim 29 further requires said assembly is of two or more reactors connected in parallel. Claim 29 further limits claim 28.

Again, Sustic and Thakker do not describe that said assembly is of two or more reactors connected in parallel. Again, it is acknowledged as stated above, that Canich

APPENDIX I

1-10. (cancelled)

11. (previously presented) A process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass, wherein the viscosity ratio of at least two amorphous polyolefins having a different molar mass is less than 0.005 or greater than 4 which comprises

preparing the bimodal or multimoldal mixture by process a) or process b),

a) preparing the amorphous polyolefin having a high molar mass by solution polymerization in one reactor of an assembly of two or more reactors connected in parallel or in series and the other constituents of the mixture, which include at least one polyolefin which has a lower molar mass than said at least one polyolefin with said high molar mass, are produced in the other reactors after which the polyolefins are mixed in solution,

homogenizing the solution of polymer mixture obtained and separating off the solvent or

b) preparing the amorphous polyolefin having a high molar mass by solution polymerization in one reactor and the other constituents of the mixture, which include at least one polyolefin which has a lower molar mass than said at least one polyolefin with said high molar mass, are introduced in the form of a polymer solution into the solution flowing from the reactor,

and homogenizing the solution of polymer mixture obtained and separating off the solvent.

12. (previously presented) The process as claimed in claim 11, wherein the amorphous polyolefin having a high molar mass has a VN of > 80 ml/g and an M_w of > 90,000 g/mol.

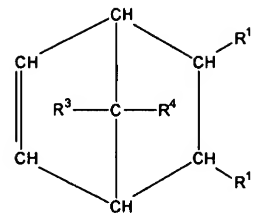
13. (previously presented) The process as claimed in claim 11, wherein the amorphous polyolefin having a high molar mass has a VN of > 100 ml/g and an M_w of > 100,000 g/mol.

14. (previously presented) The process as claimed in claim 11, wherein the amorphous polyolefin having a high molar mass has a VN of > 120 ml/g and an M_w of > 120,000 g/mol.

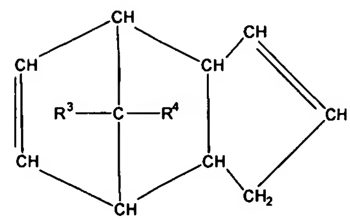
15. (previously presented) The process as claimed in claim 11, wherein the amorphous polyolefin having a high molar mass has a VN of >150 ml/g and an M_w of > 150,000 g/mol.

16. (previously presented) The process as claimed in claim 11, wherein the amorphous polyolefin is a cycloolefin copolymer.

17. (previously presented) The process as claimed in claim 11, wherein the bimodal or multimodal mixture comprises at least one cycloolefin copolymer comprising from 0.1 to 100% by weight, based on the total mass of the cycloolefin copolymer, of polymerized units derived from at least one polycyclic olefin of the formula I, II, II', III, IV, V or VI.



(I),



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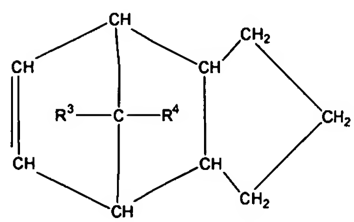

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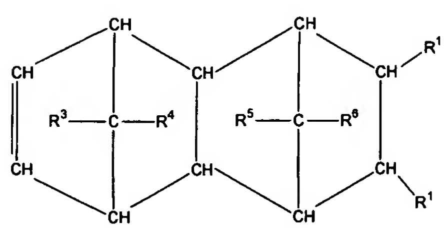

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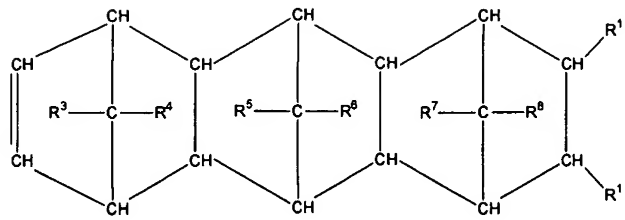

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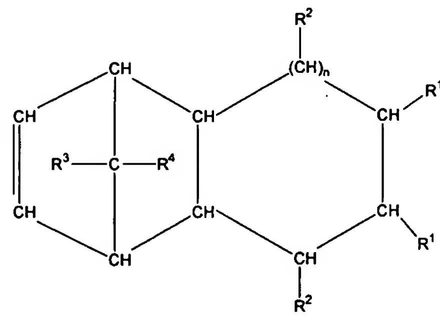

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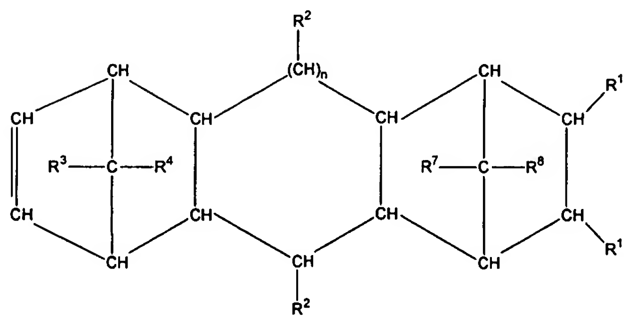
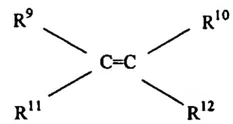


(VI),

wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7 and R^8 are identical or different and are each a hydrogen atom or a C_1-C_{20}-hydrocarbon radical, or form a saturated, unsaturated or aromatic ring,

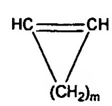
wherein identical radicals R^1 to R^8 in the various formulae 1 to VI can have different meanings, and n is from 0 to 5, and, optionally, up to 99.9% by weight, based on the total mass of the cycloolefin polymer, of polymerized units derived from one or more acyclic olefins of the formula VII



(VII),

wherein R^9, R^{10}, R^{11} and R^{12} are identical or different and are each a hydrogen atom, a linear, branched, saturated or unsaturated C_1-C_{20}-hydrocarbon radical.

18. (previously presented) The process as claimed in claim 17, wherein the cycloolefin copolymers further comprise up to 45% by weight, based on the total mass of the cycloolefin copolymer, or polymerized units derived from one or more monocyclic olefins of the formula VIII



(VIII)

wherein m is from 2 to 10.

19. (previously presented) The process as claimed in claim 18, wherein the cyclic and polycyclic olefins contain one or more substituents selected from the group consisting of halogen, hydroxyl, ester, alkoxy, carboxy, cyano, amido, imido and silyl.

20. (previously presented) The process as claimed in claim 18, wherein the cycloolefin copolymers comprise polymerized units derived from polycyclic olefins of the formula I or III and polymerized units derived from acyclic olefins of the formula VII.

21. (previously presented) The process as claimed in claim 18, wherein the cycloolefin copolymers comprises polymerized units derived from olefins having a norbornene skeleton.

22. (previously presented) The process as claimed in claim 18, wherein the cycloolefin copolymers comprise polymerized units derived from acyclic α-olefins having from 2 to 20 carbon atoms.

23. (previously presented) The process according to claim 18, wherein R^9, R^{10}, R^{11} and R^{12} are identical or different and are each a hydrogen atom, a C_1-C_8 alkyl radical or a C_6-C_{18} aryl radical.

24. (previously presented) The process as claimed in claim 21, wherein the cycloolefin copolymer comprise norbornene, tetracyclododecene, vinylnorbornene or norbornadiene.

25. (previously presented) The process as claimed in claim 22, wherein the α-olefin is ethylene.

26. (previously presented) The process according to claim 22, wherein the α-olefin is propylene.

27. (previously presented) The process according to claim 18, wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7 and R^8 are identical or different and are each a hydrogen atom, a C_1-C_8 alkyl radical, C_6-C_{18} aryl radical, a C_7-C_{20} alkylenearyl radical, a cyclic or acyclic C_2-C_{20} alkenyl radical or form a saturated, unsaturated or aromatic ring.

28. (previously presented) A process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass wherein at least one polyolefin has a high molar mass and at least one polyolefin has a lower molar mass than said at least one polyolefin with said high molar mass which comprises solution polymerizing the amorphous polyolefin having a high molar mass in one reactor of an assembly of two or more reactors connected in parallel or in series and producing the amorphous polyolefin with the lower molecular mass in the other reactors mixing the amorphous polyolefin having a high molar mass with the amorphous polyolefin having a lower molar mass in solution,

homogenizing the solution of polymer mixture obtained and

separating off the solvent.

29. (previously presented) The process as claimed in claim 28, wherein said assembly is of two or more reactors connected in parallel.

30. (previously presented) A process for the continuous preparation of a bimodal or multimodal mixture of two or more amorphous polyolefins having a different molar mass wherein at least one polyolefin has a high molar mass and at least one polyolefin has a lower molar mass than said at least one polyolefin with said high molar mass, which comprises solution polymerizing the amorphous polyolefin having a high molar mass in one reactor and introducing the amorphous polyolefin with the lower molecular mass in the form of a polymer solution into the solution flowing from the reactor,

homogenizing the solution of polymer mixture obtained and

separating off the solvent.

describes that the assembly may be in parallel or in series. However, as stated above, the applicant does not believe that Canich is combinable with Sustic or Thakker.

VIII. CONCLUSION

It is believed that the claims define an invention which is new, useful, and unobvious. For the above reasons, the applicants request passage to allowance. This brief is being submitted in triplicate.

A one month extension has been paid. However, in the event that the undersigned is mistaken in his calculations, an appropriate extension of time to respond is respectfully petitioned for, and the Commissioner is hereby authorized to charge the account of the undersigned attorneys, Patent Office Deposit Account No. 03-2775, for any fees which may be due upon the filing of this paper.

Respectfully submitted,

CONNOLLY BOVE LODGE & HUTZ LLP

By [signature]

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